IN THE CLAIMS:

Please amend the claims as follows:

1.   (Currently Amended)   A computer implemented method of providing fee-based access to data, comprising:

providing an abstract model for logically defining abstract operations to access the data, the abstract model comprising:

(i)   a plurality of logical fields;

(ii)   a mapping rule for each of the plurality of logical fields, which map the plurality of logical fields to physical entities of the data, and wherein each mapping rule comprises an access method which is executed to retrieve a respective physical field of the physical entities of the data; and

(iii)   a fee schedule for each of the plurality of logical fields, wherein each fee schedule for a given logical field defines a fee to be charged when the given logical field is involved in an abstract operation to access a physical entity corresponding to the given logical field; and

~~providing a fee calculator which when executed configures~~ executing a fee calculator on a computer processor to calculate, based on the fee schedules, a fee to be charged for ~~executing physical operations~~ accessing the data.

2.   (Currently Amended)   The computer implemented method of claim 1, further comprising:

accessing the data according to an abstract operation comprising at least two of the plurality of logical fields; ~~and~~

~~calculating, by executing the fee calculator, the fee to be charged based on separate fee schedules corresponding to each of the at least two plurality of logical fields~~

wherein the fee to be charged is calculated based on separate fee schedules corresponding to each of the at least two of the plurality of logical fields.

3.   (Previously Presented)   The computer implemented method of claim 1, further comprising:

providing a run-time component configured with transformation instructions to transform each abstract operation, comprising logical fields selected from the plurality of logical fields, into a physical operation consistent with the physical data.

4.   (Currently Amended)   The computer implemented method of claim 1, wherein the abstract operation is an abstract query comprising at least two logical fields, ~~the method further comprising executing the fee calculator~~ <u>and wherein the fee calculator is executed</u> to perform an operation comprising:

accessing a corresponding fee schedule for each of the at least two logical fields;

determining a per request fee for a first one of the at least two logical fields, wherein the per request fee is charged for each abstract operation involving the first one of the at least two logical fields; and

determining a per item fee for a second one of the at least two logical fields, wherein the per item fee is charged for each instance of the second one of the at least two logical fields involved in a given abstract operation.

5.   (Previously Presented)   The computer implemented method of claim 4, the operation further comprising multiplying the per item fee by a number of instances of the second one of the at least two logical fields to determine a product, and summing the product and the per request fee to determine the fee to be charged.

6.   (Previously Presented)   The computer implemented method of claim 1, wherein at least one fee schedule defined by the abstract model specifies a first fee for a first type of operation and a second fee for a second type of operation; and further comprising calculating the fee to be charged based on the type of operation performed.

7.   (Previously Presented)   The computer implemented method of claim 6, wherein the first type of operation is a query and the second type of operation is one of an insert and an update.

8.   (Currently Amended)   A computer implemented method of providing fee-based access to physical data comprising a plurality of physical entities each comprising a plurality of physical fields, the method comprising:

     providing an abstract model for defining abstract operation specifications logically describing operations to access the data, the abstract model comprising:

         (a)   a plurality of logical fields;

         (b)   a mapping rule for each of the plurality of logical fields, which map each of the plurality of logical fields to at least one of the physical entities of the data, and wherein each mapping rule comprises an access method which is executed to retrieve a respective physical field of the physical entities of the data;

         (c)   a plurality of model entity definitions, each comprising at least one logical field corresponding to a physical field of a physical entity; and

         (d)   a logical field fee schedule for each of the plurality of logical fields, wherein the fee schedules each specify a fee for accessing a corresponding physical field as part of a physical operation; and

~~providing a fee calculator which when executed configures~~ executing a fee calculator on a computer processor to calculate, based on the fee schedules, a fee to be charged for ~~executing physical operations~~ accessing the data.

9.   (Currently Amended)   The computer implemented method of claim 8, further comprising:

     transforming, according to the abstract model, abstract operation specifications into physical operation specifications consistent with the physical data, wherein each abstract operation specification includes at least one of the plurality of model entity definitions~~; and~~

~~calculating, by executing the fee calculator, the fee to be charged for executing~~ ~~physical operations based on the fee schedules.~~

10.   (Previously Presented)   The computer implemented method of claim 8, wherein at least one logical field fee schedule defined by the abstract model specifies a first fee for a first type of operation and a second fee for a second type of operation.

11.   (Previously Presented)   The computer implemented method of claim 10, wherein the first type of operation is a query and the second type of operation is one of an insert and an update.

12.   (Previously Presented)   A computer implemented method of providing fee-based access to data comprising a plurality of physical entities, each comprising a plurality of physical fields, comprising:

receiving instructions to perform an operation for accessing the data;

performing the operation;

determining field-specific fees for each of a plurality of the physical fields accessed by the operation; and

calculating, by operation of a computer processor, a total fee to be charged to a user for the operation.

13.   (Previously Presented)   The computer implemented method of claim 12, wherein the physical entities are database tables.

14.   (Previously Presented)   The computer implemented method of claim 12, wherein the operation is one of a query, an insert and an update.

15.   (Previously Presented)   The computer implemented method of claim 12, wherein determining field-specific fees comprises determining whether a field-specific fee is a per request fee or a per item fee, wherein the per request fee is a singular fee

charged for the operation regardless of a number of instances a corresponding physical field is included in the operation and wherein the per item fee is charged for each instance of a corresponding physical field included in the operation.

16.   (Previously Presented)   The computer implemented method of claim 12, wherein determining field-specific-fees comprises accessing fee schedules for each respective physical field accessed by the operation.

17.   (Previously Presented)   The computer implemented method of claim 16, wherein each of the fee schedules defines a separate fee for each separate operation type.

18.   (Previously Presented)   The computer implemented method of claim 17, wherein the separate operation types comprise queries, inserts and updates.

19.   (Previously Presented)   The computer implemented method of claim 12, wherein determining field-specific fees comprises accessing an abstract model for logically defining the operation accessing the data, the abstract model comprising:

> (i)   a plurality of logical fields;
>
> (ii)   a mapping rule for each of the plurality of logical fields, which map the plurality of logical fields to physical entities of the data; and
>
> (iii)   a fee schedule for each of the plurality of logical fields, wherein each fee schedule for a given logical field defines a fee to be charged when the given logical field is involved in an abstract operation to access a physical entity corresponding to the given logical field.

20.   (Previously Presented)   The computer implemented method of claim 19, wherein each mapping rule comprises an access method for each logical field of an abstract operation specification logically defining the operation accessing the data, and wherein each logical field describes a physical location of a physical entity.

21.   (Previously Presented)   The computer implemented method of claim 19, wherein each fee schedule defines at least one of a per request fee and a per item fee, wherein the per request fee is a singular fee charged for the operation regardless of a number of instances a corresponding logical field is included in the operation and wherein the per item fee is charged for each instance of a corresponding logical field included in the operation.

22.   (Previously Presented)   The computer implemented method of claim 19, further comprising:

transforming, according to the abstract model, abstract operations into physical operation consistent with the physical data, wherein each abstract operation includes at least one of the plurality of model entity definitions; and

calculating the fee for executing physical operations based on the fee schedules.

23.   (Previously Presented)   The computer implemented method of claim 19, further comprising:

accessing the data according to the abstract operation, the abstract operation comprising at least two of the plurality of logical fields; and

calculating the fee to be charged based on separate fee schedules corresponding to each of the at least two plurality of logical fields.

24.   (Previously Presented)   The computer implemented method of claim 19, further comprising:

providing a run-time component configured with transformation instructions to transform each abstract operation, comprising logical fields selected from the plurality of logical fields, into a physical operation consistent with the physical data; and

providing a fee calculator configured to perform the calculating of the fee for executing physical operations based on the fee schedules.

25.   (Previously Presented)   The computer implemented method of claim 19, wherein the abstract operation is an abstract query comprising at least two logical fields, the method further comprising:

    accessing a corresponding fee schedule for each of the at least two logical fields;

    determining a per request fee for a first one of the at least two logical fields, wherein the per request fee is charged for each abstract operation involving the first one of the at least two logical fields; and

    determining a per item fee for a second one of the at least two logical fields, wherein the per item fee is charged for each instance of the second one of the at least two logical fields involved in a given abstract operation.

26.   (Previously Presented)   The computer implemented method of claim 25, further comprising multiplying the per item fee by a number of instances of the second one of the at least two logical fields to determine a product, and summing the product and the per request fee to determine the fee to be charged.

27.   (Previously Presented)   The computer implemented method of claim 19, wherein at least one fee schedule defined by the abstract model specifies a first fee for a first type of operation and a second fee for a second type of operation; and further comprising calculating the fee to be charged based on the type of operation performed.

28.   (Previously Presented)   The computer implemented method of claim 27, wherein the first type of operation is a query and the second type of operation is one of an insert and an update.

29.   (Previously Presented)   A computer-readable storage medium containing a program which, when executed by a processor, performs operations for accessing physical data comprising a plurality of physical entities, each having a plurality of physical fields, the operation comprising:

receiving instructions to perform an operation accessing the data;

causing performance of the operation;

determining field-specific fees for each of a plurality of the physical fields accessed by the operation; and

calculating a total fee to be charged to a user for the operation.

30. (Previously Presented) The computer-readable storage medium of claim 29, wherein the physical entities are database tables.

31. (Previously Presented) The computer-readable storage medium of claim 29, wherein the operation is one of a query, an insert and an update.

32. (Previously Presented) The computer-readable storage medium of claim 29, wherein determining field-specific fees comprises determining whether a field-specific fee is a per request fee or a per item fee, wherein the per request fee is a singular fee charged for the operation regardless of a number of instances of a corresponding physical field are included in the operation and wherein the per item fee is charged for each instance of a corresponding physical fee included in the operation.

33. (Previously Presented) The computer-readable storage medium of claim 29, wherein determining field-specific fees comprises accessing fee schedules for each respective physical field accessed by the operation.

34. (Previously Presented) The computer-readable storage medium of claim 33, wherein each of the fee schedules defines a separate fee for each separate operation type.

35. (Previously Presented) The computer-readable storage medium of claim 34, wherein the separate operation types comprise queries, inserts and updates.

36.   (Previously Presented)   The computer-readable storage medium of claim 29, wherein determining field-specific fees comprises accessing an abstract model for logically defining the operation accessing the data, the abstract model comprising:

>   (i)   a plurality of logical fields;

>   (ii)   a mapping rule for each of the plurality of logical fields, which map the plurality of logical fields to physical entities of the data; and

>   (iii)   a fee schedule for each of the plurality of logical fields, wherein each fee schedule for a given logical field defines a fee to be charged when the given logical field is involved in an abstract operation to access a physical entity corresponding to the given logical field.

37.   (Previously Presented)   The computer-readable storage medium of claim 36, wherein each mapping rule comprises an access method for each logical field of an abstract operation specification logically defining the operation accessing the data, and wherein each logical field describes a physical location of a physical entity.

38-45.   (Canceled)

46.   (Currently Amended)   A computer implemented method of providing a logical framework for defining abstract operations for accessing physical data comprising a plurality of physical entities each comprising a plurality of physical fields, the method comprising:

>   providing an abstract model for defining abstract operation specifications logically describing operations to access the data, the abstract model comprising:

>   (a)   a plurality of logical fields;

>   (b)   a mapping rule for each of the plurality of logical fields, which map each of the plurality of logical fields to at least one of the physical entities of the data, and wherein each mapping rule comprises an access method which is executed to retrieve a respective physical field of the physical entities of the data;

(c)   a plurality of model entity definitions, each comprising at least one logical field corresponding to a physical field of a physical entity; and

(d)   model entity fee schedules for each of the plurality of model entity definitions, wherein the fee schedules each specify a fee for accessing a physical field of the corresponding model entity definition;

providing a run-time component to transform, according to the abstract model, abstract operation specifications into physical operation specifications consistent with the physical data, wherein each abstract operation specification includes at least one user-selected model entity definitions of the plurality of model entity definitions; and

providing a fee calculator which when executed configures executing a fee calculator on a computer processor to calculate, based on the fee schedules, a fee to be charged for executing physical operations accessing the data.

47.   (Previously Presented)   The computer implemented method of claim 46, wherein each of the plurality of physical entities is a table in a database.

48.   (Previously Presented)   The computer implemented method of claim 46, wherein each physical operation specification is selected from one of an insert statement and an update statement and wherein the model entity fee schedules define different fees for each statement.

49.   (Previously Presented)   The computer implemented method of claim 46, wherein each physical operation specification is a query, and wherein the model entity fee schedules define fees specific to queries.

50.   (Previously Presented)   The computer implemented method of claim 46, wherein the abstract operation specification is an abstract query, and further comprising:

receiving, via a user interface, the abstract query comprising a plurality of query conditions, result fields and a selection of one of the model entity definitions;

accessing the model entity definition corresponding to the selection;

determining whether the model entity definition corresponding to the selection specifies one or more required result fields; and

adding the one or more required result fields to the query upon determining that the model entity definition corresponding to the selection specifies one or more required result fields.

51.   (Previously Presented)   The computer implemented method of claim 46, further comprising transforming, by the run-time component transforms and according to the abstract model, a single abstract operation specification into at least two separate physical operation specifications consistent with the physical data, wherein each physical operation specification modifies a different physical entity of the data and wherein each physical operation specifications is ordered for execution according to a physical entity relationships specification defining hierarchical relationships between the physical entities of the data.

52.   (Previously Presented)   The computer implemented method of claim 46, further comprising:

issuing, by a requesting entity, a request to execute a single abstract operation specification; and

transforming, by the run-time component, the single abstract operation specification into the at least two physical operation specifications for modifying the data.

53.   (Previously Presented)   The computer implemented method of claim 52, wherein transforming the single abstract operation specification into the at least two physical operation specifications comprises:

generating the at least two physical operation specifications; and

ordering the at least two physical operation specifications according to a physical entity relationships specification of the abstract model.

54.   (Canceled)

55.   (Previously Presented)   The computer implemented method of claim 46, wherein each logical field describes a location of the physical entities of the data.

56.   (Previously Presented)   The computer implemented method of claim 46, further comprising a logical field fee schedule for each of the plurality of logical fields, wherein the fee schedules each specify a fee for accessing a corresponding physical field as part of a physical operation specification.

57.   (Previously Presented)   The computer implemented method of claim 56, wherein at least one fee schedule defined by the abstract model specifies a first fee for a first type of operation and a second fee for a second type of operation.

58.   (Previously Presented)   The computer implemented method of claim 57, wherein the first type of operation is a query and the second type of operation is one of an insert and an update.

59.   (Previously Presented)   A computer-readable storage medium containing a program which, when executed by a processor, provides a logical framework for defining abstract query operations, the program comprising:
        an abstract model for defining abstract queries logically describing operations to query the data, the abstract model comprising:
                (i)   a plurality of logical fields;
                (ii)   a mapping rule for each of the plurality of logical fields, which map the plurality of logical fields to physical entities of the data, and wherein each mapping rule comprises an access method which is executed to retrieve a respective physical field of the physical entities of the data; and
                (iii)   a fee schedule for each of the plurality of logical fields;

a run-time component configured with transformation instructions to transform an abstract query, comprising logical fields selected from the plurality of logical fields, into a physical query consistent with the physical data; and

a fee calculator configured to calculate a fee for executing physical queries based on the fee schedules.

60.   (Previously Presented)   The computer-readable storage medium of claim 59, wherein the mapping rules comprise an access method for each of the plurality of logical fields, wherein each logical field describes a location of the physical entities of the data.

61.   (Currently Amended)   A computer comprising:
        a memory; and
        at least one computer processor[[,]]; and further comprising
        a logical framework for defining abstract modification operations for modifying physical data, the logical framework comprising:
                an abstract model for defining an abstract modification specification logically describing an operation to modify the data, the abstract model comprising:

(i)	a plurality of logical fields;
(ii)	a mapping rule for each of the plurality of logical fields, which map the plurality of logical fields to physical entities of the data, and wherein each mapping rule comprises an access method which is executed to retrieve a respective physical field of the physical entities of the data; and
(iii)	a fee schedule for each of the plurality of logical fields;

        a run-time component to transform an abstract query, comprising logical fields selected from the plurality of logical fields, into a physical query consistent with the physical data; and

a fee calculator which when executed configures [[a]] the at least one computer processor to calculate a fee to be charged for executing physical queries based on the fee schedules.

62. (Original) The computer of claim 61, wherein each fee schedule defines at least one of a per request fee and a per item fee, wherein the per request fee is a singular fee charged for the operation regardless of a number of instances a corresponding logical field is included in the operation and wherein the per item fee is charged for each instance of a corresponding logical field included in the operation.

63. (Previously Presented) The computer of claim 61, wherein each logical field describes a location of the physical entities of the data.

64. (Previously Presented) A computer implemented method of providing fee-based access to data comprising a plurality of physical entities, each comprising a plurality of physical fields, comprising:

receiving, via a user interface, user input comprising instructions for an operation for accessing the data selected fields of the plurality of the physical fields;

determining field-specific fees for each of the selected fields;

calculating, by a computer processor, a fee to be charged to a user for accessing the selected fields; and

displaying the fee to the user via a user interface.

65. (Previously Presented) The computer implemented method of claim 64, wherein the physical entities are database tables.

66. (Previously Presented) The computer implemented method of claim 64, wherein determining field-specific fees comprises determining whether a field-specific fee is a per request fee or a per item fee, wherein the per request fee is a singular fee charged for the operation regardless of a number of instances a corresponding physical

field is included in the operation and wherein the per item fee is charged for each instance of a corresponding physical field included in the operation.

67.   (Previously Presented)   The computer implemented method of claim 64, wherein determining field-specific fees comprises accessing fee schedules for each respective physical field accessed by the operation.

68.   (Previously Presented)   The computer implemented method of claim 67, wherein each of the fee schedules defines a separate fee for each separate operation type.

69.   (Previously Presented)   The computer implemented method of claim 68, wherein the separate operation types comprise queries, inserts and updates.

70.   (Previously Presented)   A computer implemented method for displaying fee information for fee-based access to data comprising a plurality of physical entities, each comprising a plurality of physical fields, comprising:

　　　displaying one or more user interface screens for construction of queries;

　　　receiving, via the one or more user interface screens, user input defining a query configured to access selected fields of the plurality of physical fields; and

　　　displaying, via the one or more user interface screens on an output device, a field-specific access fee for each of the selected fields.

71.   (Previously Presented)   The computer implemented method of claim 70, further comprising displaying a per query fee, the per query fee being a singular fee charged for the query regardless of a number of instances a corresponding physical field is included in the query.

72.   (Previously Presented)   The computer implemented method of claim 70, further comprising determining the field-specific fees by accessing an abstract model for logically defining the query, the abstract model comprising:

   (i)   a plurality of logical fields;

   (ii)   a mapping rule for each of the plurality of logical fields, which map the plurality of logical fields to physical entities of the data; and

   (iii)   a fee schedule for each of the plurality of logical fields, wherein each fee schedule for a given logical field defines a fee to be charged when the given logical field is involved in a query to access a physical entity corresponding to the given logical field.

73.   (Previously Presented)   The computer implemented method of claim 72, wherein each mapping rule comprises an access method for each logical field of an abstract operation specification logically defining the operation accessing the data, and wherein each logical field describes a physical location of a physical entity.

74.   (Previously Presented)   The computer implemented method of claim 72, wherein each fee schedule defines at least one of a per request fee and a per item fee, wherein the per request fee is a singular fee charged for the query regardless of a number of instances a corresponding logical field is included in the query and wherein the per item fee is charged for each instance of a corresponding logical field included in the query.